

Goal 3:

4-H will use new technologies to shape 4-H Learning opportunities that go beyond boundaries of geography, time, expertise and leadership.

Goal 4:

4-H will promote scientific and technological literacy.

Arkansas

Arkansas AG Adventures

Situation:

Arkansas Ag Adventures teaches students the importance of the agricultural industry through learning in a fun, hands-on educational setting.

Program Description:

A century ago, the majority of children lived on farms, but today less than three percent of the population of the United States is directly involved in agriculture. Children do not know where their food, clothes, and agricultural products come from nor do they know the value of a safe and inexpensive agricultural commodity.

In response to the growing need for agricultural education, Arkansas AG Adventures was developed as a cooperative agricultural awareness program between the University of Arkansas Cooperative Extension Service and the University of Arkansas at Pine Bluff. The program will be based at the developing UAPB Agricultural Awareness Center located in Lonoke, Arkansas just 26 miles from Little Rock.

The new center is being planned to provide an outdoor classroom for students to learn about the importance to agriculture through hands-on activities such as soil sampling, planting crops, making butter, and caring for livestock. Science basics are learned through agricultural practices, but history is also an important part of Arkansas AG Adventures. The UAPB Farmstead Museum is a house that was built in 1923 and restored recently by UAPB volunteers. The museum is in the heart of the ten acre Ag Awareness Center and is an important tool in teaching rural life history in Arkansas. Students learn how families lived by the furnishings and unique tools housed in the museum. They also learn by playing heritage games such as rolling the hoop and washers, or by making butter, or even by playing spoons to popular folk music.

Stakeholder Satisfaction:

The program focuses on youth from inner-city schools, but teaches a wide variety of youth and adults. For schools that can not make a trip to the center, they have the option to participate in school enrichment programs. This past year, an EPA grant helped Arkansas AG Adventures provide materials and travel money for soil and groundwater quality education in the Arkansas Delta region.

Accomplishments and Impacts:

Although the center is still being developed, there have been over 800 program participants at the UAPB Agricultural Awareness Center. Daytime school field trips are planned around the Fall

and Spring school semesters, but the popularity of the program spawned summer and nighttime field trips to the center.

Resource Commitment:

Since the formal beginning of this program 2 years ago, UACES and UAPB have shared in the operating costs of the program including the salary of one full time Extension faculty member and 2 summer 4-H technicians.

Collaborators:

School enrichment programs are carried out by the full-time Extension faculty member. However, programs at the Agricultural Awareness Center require many additional teachers and facilitators. These roles have been filled by university specialists, state and county Extension faculty, NRCS conservationists, Farm Bureau personnel, 4-H volunteer leaders, Farm Bureau women's committee members, and UAPB students.

The Lonoke County Master Gardeners have been the strongest supporters of the Agricultural Awareness Center by providing the expertise and labor for the heritage gardens around the Farmstead Museum. The local historical societies have also provided assistance in the formation of programs at the museum, and partnerships with UAPB alumni and NRCS volunteers helped restore the museum and center grounds.

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Base program areas to which this program applies:

Agriculture
4-H Youth Development
Natural Resources Environmental Management

New Jersey

4-H Adventures in Environmental Science

Situation:

In the 1980's, New Jersey had a garbage crisis of unforeseen proportions, and mandated recycling for all municipalities. For the first time in their lives many youth and adults had to learn where their garbage goes and how their actions directly impact the environment around them.

Program Description:

In the 1980's, a 4-H environmental club was studying issues of waste management and the impact we all have on our environment. A 4-H volunteer and faculty member believed the 4-H model of young people changing the habits of their peers and parents could be put to use by developing environmental ambassadors who understood the pros and cons of waste management alternatives and other hot environmental topics. The year-long efforts of that club were

condensed into a week of intensive study. In 1989 the first Warren County 4-H Conservation School was held.

The week-long residential program is for teens, grades 7 – 12. First a county event, now it is a state event called the 4-H Adventures in Environmental Science program. This program has been held for 13 successful years, and has trained over 200 youth from throughout New Jersey how to investigate important environmental topics.

The week includes tours of waste management facilities, hands-on activities that investigate issues of waste and water quality, and a day-long canoe trip to investigate the use of water for recreation, manufacturing and energy production. In addition, the group learns about an osprey reintroduction program, visits to a wildlife rehabilitation center and a golf course which recycles water.

The highlights of the week include a rock climbing adventure and a hike on the Appalachian Trail. At the end of the week, each sub-group of 5 – 6 students must present an environmental topic to a mock legislative body, who decides what to do with a mock parcel of land.

Two important projects have been added to the program in recent years: a stream restoration project and a soil survey of farms using a variety of soil amendments, including waste water sludge, commercial fertilizer and manure.

Stakeholder Satisfaction:

One Faculty member of Rutgers Cooperative Extension commits approximately .1 FTE's to this week- long program. This County 4-H Agent conducts monthly planning and training sessions with the volunteer counselors and staff of the previous and current year. Two adult volunteers are also involved in the program year-long. The teen counselors and staff provide valuable suggestions and comments into the following years program.

Accomplishments and Impacts:

Each year of the program, students are asked to complete an evaluation of the event, and a self-assessment of behavioral changes. After five years of the program and again after 10 years, long-term surveys were conducted to see what impact this program has had on the attitudes and behaviors of the participants.

Results of these surveys conclude that a majority of the students are now more aware of how to handle their waste stream and many of them have become environmental ambassadors in sharing the information they have learned during the program with others. Several former students reported starting recycling programs or educational events at their high schools or in college. While there are only a few students that report actually working in an environmental field, many reported taking environmental courses in high school or college as a result of interest peaked from the 4-H program. Others report volunteering for environmentally related organizations.

In the stream restoration project, a fish survey was conducted in 2002 with the help of a professional from the Division of Fish, Game and Wildlife. This survey confirmed the importance of our stream restoration project to maintaining the stream as a natural trout-producing habitat. The soil tests are not yet complete from the second year, but hopefully will

show the differences in soil quality after sludge, manure and commercial fertilizer is used over a five-year period.

Resource Commitment:

Major donors: Clean Communities Grants (\$2,000 – 3,000 per year); Union Carbide (\$1,000 for five years); Roche Vitamins (\$1,000 per year for 10 years); Covanta Energy (\$1,000 – 1,500 per year for 5 years); Williams (\$1,000 for 2 years).

Collaborators:

New Jersey Division of Fish, Game and Wildlife
Warren County Soil Conservation Service
Natural Resource Conservation Service
Rutgers University Soil Testing Laboratory
Merrill Creek Conservation and Sportsmen's Association
Mid Jersey Trout Unlimited
New Jersey Trappers Association
United States Environmental Protection Agency

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Base program areas to which this program applies:

Natural Resources Environmental Management,
4-H Youth Development
Leadership and Volunteer Development.

Pennsylvania

4-H Embryology/Youth Development Programs

Situation:

Youth often lack a knowledge of agriculture and the practical application of life sciences. This school enrichment program provides important life development and life skills for young people. The program also presents an occasion for urban and suburban families to become aware of the various opportunities 4-H can provide.

Program Description:

Embryology: The Study of Life is a hands-on, life science educational program designed for use in the classroom. Building on their natural curiosity, students in the program can develop an understanding of biology concepts through direct experience with living things, their life cycles, and their habitats. The curriculum also helps students develop life skills. The 4-H embryology program provides interested classroom teachers, primarily in grades 3–5, with fertile chicken eggs and with incubators, and candlers as needed. Extension educators collaborate with

classroom teachers to develop programs, and the program provides an opportunity to introduce new audiences to 4-H.

Several examples exemplify the success of this program in Pennsylvania. The 4-H embryology program in Berks County is a hallmark 4-H school enrichment program. The curriculum, which includes science and food and fiber system educational objectives, is delivered by part-time Program Assistants who visit each classroom 4 times (once per week) to teach a 45 to 60 minute lesson. A total of 9 teachers attended the New Teachers' Training. An additional 28 new teachers were trained individually, and the Extension Agent was asked to conduct a training for 20 teachers in the Philadelphia School District. While Extension can provide all the necessary equipment for the Berks County program, in the 2000-01 school year the fee schedule was revised to encourage schools to purchase their own equipment. A tele-publications fund drive was initiated in 2001 to raise money specifically for this program. A total of \$12,048.75 was raised.

Stakeholder Satisfaction:

Nearly 53,000 students in 56 counties across the Commonwealth have participated in the program during 2001. Results from the evaluation of the New Teachers' Training in Berks County indicated that the training met their needs as they begin this project. One teacher commented that the training was, "Very good...thorough." An evaluation of the 4-H program completed by teachers in Chester County (n=34) point to the following: 95 percent indicated the project teaches the biology of fowl and 80 percent the anatomy and organ function; 100 percent reported the project teaches students to care for young animals; 100 percent of the teachers reported that students learn how chicks hatch and behave; 94 percent of the teachers felt the embryology program has merit in teaching students to cooperate with other students; and 94 percent observed that students become more gentle and nurturing. Teachers commented that this 4-H project offers classes the opportunity for "hands-on experience," "high interest learning," "to learn teamwork," and "cooperation."

Accomplishments and Impacts:

There continues to be strong demand for this program in schools. In Berks County, for example, the number of youth completing the 4-H embryology project in 2000-01 increased 8.3 percent from the previous school year, and full enrollment in the project, at a designated grade level, exists in 10 of 18 school districts. A total of 650 youths in 31 classrooms in 12 schools in Indiana County were involved in the 4-H embryology program. Seventeen of these classrooms reported pre- post-test scores, with 100 percent showing an increase in post-test scores (range of 1.7 to 5.5 on a 20 point test). More than 2,080 students in 83 classrooms in Lancaster County participated in the program, and teacher evaluations indicated the following learning: 96 percent, respect for living things; 94 percent, care for chicks; 92 percent, embryo development; 90 percent, parts and functions of the egg; 64 percent, data collection; 60 percent, law of nature; 88 percent, patience; 94 percent, cooperation; 94 percent, sharing; 94 percent, responsibility.

Teachers and administrators alike commend the program. In Montgomery County, special public recognition through a newspaper editorial was given to the 4-H embryology program by an administrator of an alternative school, who praised the program and the extension educator for their impacts on the youth. A teacher made the following comments: "It was an amazing and heartwarming sight. Twenty of the most challenging middle school students from throughout the area discussing their very real concerns about a blind baby chick and struggling with the issues

of what caring really means. For an executive director, it just doesn't get any better. I am deeply appreciative for the assistance and guidance of the Montgomery County 4-H Club and [the extension educator]."

Additionally, the National Embryology in the Classroom web site, hosted by Phillip Clauer at Penn State supports this program. The National 4-H Embryology Web site address is:
<http://ulisse.cas.psu.edu/4hembryo/index.html>.

Resource Commitment:

No external funds support the program.

Collaborators:

School teachers

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Base program areas to which this program applies: (List those that apply)

4-H Youth Development

Agriculture
